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ABSTRACT

This paper describes the role of and planning process for networking conferences in the cluster evaluation of the Michigan-based science education projects funded through the W. K. Kellogg Foundation Science Education Initiative to improve science teaching and learning with a long term goal of improving the scientific literacy of Michigan citizens. Cluster evaluation is designed to strengthen individual projects and to assess the impact of a selected group of projects and thus strengthen Kellogg Foundation programs and policymaking. Networking conferences are described as an important component of the Foundation's cluster evaluation process. They serve the following purposes: (1) plan for, exchange ideas about, provide direction to, and discuss issues and problems emerging from the cluster evaluation; (2) share lessons learned with other projects; (3) learn about current and developing issues in science education; (4) share science education curriculum materials and instructional strategies; and (5) visit project sites. The paper shows details of the design, implementation, and evaluation phases of networking conferences and presents nine fundamental propositions that make these conferences a powerful tool for dissemination of information. Appendices provide a chart of the steps in the conference planning task and proposed time frames for completing the tasks. (Contains 10 references.) (JDD)

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Using Networking Conferences for Science Program Improvement

A paper presented at the Annual Research Convocation of the College of Education at Western Michigan University
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College of Education Research Convocation

Using Networking Conferences for Science Program Improvement

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ABSTRACT

This paper describes the important role of and planning process for networking conferences in the cluster evaluation of two groups of Michigan-based science education projects funded through the W.K. Kellogg Foundation Science Education Initiative. The overall goal of the initiative is to improve science teaching and learning with a long term goal of improving the scientific literacy of Michigan citizens.

Held twice each year, networking conferences are an important component of the Foundation's cluster evaluation process. They sever the following purposes: (1) to plan for, exchange ideas about, provide direction to, and discuss issues and problems emerging from the cluster evaluation; (2) to share lessons learned with other projects; (3) to learn about current and developing issues in science education; (4) to share science education curriculum materials and instructional strategies; and (5) to visit project sites. Conference participants include project directors, project evaluators and other key staff of the projects, the WMU cluster evaluation team, W.K. Kellogg program directors and invited guests.

This paper presentation shows details of the designing, implementation, and evaluation phases of networking conferences and a summary of nine fundamental propositions that make these conferences a powerful tool for dissemination of information.

USING NETWORKING CONFERENCES FOR SCIENCE PROGRAM IMPROVEMENT

This paper describes the importance of and shows the design, implementation, and evaluation phases of Projects Cluster Evaluation Networking Conferences of two groups of Michigan-based science education projects funded through the W. K. Kellogg Foundation Science Education Initiative.

Networking conferences are an invaluable strategy for planning, exchanging ideas about, and discussing issues and problems emerging from cluster evaluation; learning about current and developing issues in science education; sharing curriculum materials, instruments, strategies, and project experiences; and improving the knowledge and skills of cluster project staff.

Networking conferences are held twice each year. They are an important component of the W.K. Kellogg Foundation cluster evaluation process. Science education networking conferences serve to: plan for, exchange ideas about, provide direction to, and discuss issues and problems emerging from the cluster evaluation; share lessons learned and science education curriculum materials and instructional strategies with other projects; learn about current and developing issues in science education; and visit project sites.

Conference participants include project directors, project evaluators and other key staff of the projects, the cluster evaluation team, W. K. Kellogg program directors and invited guests.

NETWORKING CONFERENCES AND CLUSTER EVALUATION

Networking conference is one component of cluster evaluation. "Cluster evaluation provides a framework for addressing important evaluation questions related to outcomes, context, and implementation" (Barley & Jenness, 1993a). The purposes of the cluster evaluation are 1) to strengthen individual projects and 2) to assess the impact of the selected groups of projects and, thus, strengthen Kellogg Foundation programs and policy making. The overall goal of the Science Education Initiative is to improve science teaching and learning, with a long-term goal of improving the scientific literacy of Michigan citizens.

Cluster evaluation can be categorized as a type of naturalistic evaluation. It includes five fundamental elements: 1) negotiated common cluster outcomes, 2) collaborative data collection and analysis, 3) regular networking conferences, 4) technical assistance to individual projects, and 5) cooperative derivation and dissemination of findings (Jenness and Barley, 1992a). Communication among stakeholders (funders, project staff, science educators, and the community) is an essential part of cluster evaluation. Cluster evaluation meets project staff technical assistance needs by providing a skilled, credible evaluator to work with a cluster of projects to assure that useful and defensible information is obtained (Barley & Jenness, 1993b).

NETWORKING CONFERENCES

Cluster evaluation networking conferences are special gatherings held semi-annually of project directors, evaluators, other key project staff, foundation staff, invited guests, and cluster evaluators. Conference participants share successes, solve problems, discuss issues, and further individual project and cluster-level evaluation efforts. Purposes for networking conferences are to "1) conduct strategic planning for, exchange ideas about, provide direction to, discuss issues and problems emerging from, and review and analyze data and findings of the cluster evaluation; 2) share lessons learned with other projects; 3) learn about current and developing issues in science education and science curriculum, instruction, and assessment topics directly pertinent to projects; 4) formally and informally share science education curriculum materials and instructional strategies; and 5) visit project sites" (Jenness and Barley, 1992b, p. 10).

Networking conferences are usually one and one-half to two days in length, held at hotel and conference facilities near home bases of one or more projects. Each project is represented at least by one person, with "host" projects inviting additional project staff and supporters. Project participants receive preconference notebooks with an agenda, organizational information, and assignments to prepare for working sessions. Networking conference topics emerge from needs identified by project directors, cluster evaluators, and Foundation staff. Additionally, state, regional, and national issues in science and general education, evaluation, and leadership development are incorporated into conference agendas.

Networking conference implementation is characterized by group activities related to the conference topics. Conference participants work and discuss the assignments previously mailed with the pre-conference booklet. Group activities "promote the exchange of ideas and experiences among project staff, and build a network among the projects" (Rubino, 1993). Specific activities formats include all-group discussion sessions, small group work, poster sessions, individual project presentations, roundtable discussions, and one-on-one consultation.

One fundamental element of the conferences is the site visit to one or more of the cluster projects. The site visit is facilitated by project staff, who discuss the development of the project, provide opportunities to tour facilities, and answer questions about the project. Participants learn about details of project goals and objectives, equipment, project problems and solutions, experiences, and the day-to-day operation. In addition, the site visit involves all project stakeholders, allowing dialog with a variety of project staff, participants, and different audiences and learning about each one's perspective.

At the end of the conference, participants complete a conference evaluation instrument whose results become part of the networking conference report. The networking conference report also includes a summary of activities, decisions, conclusions of small group work sessions, supplementary materials, articles, and recent information about science education. Selection of materials is based on issues considered in the conference. Thus, this report is not only a post-conference evaluation report but a source of information about evaluation and science education. "It fulfills a formative function by providing useful materials to project staff and conference participants"(Rubino, 1993). A characteristic of the report that can be related to the learning function pointed out by Guba and Lincoln (1989) in their naturalistic approach to evaluation.

In summary, networking conferences offer an opportunity to bring together participants to build their evaluation knowledge and skills; allow sharing of issues and knowledge of science education; promote awareness of other ideas and concepts; develop connections among project staff, foundation staff, and cluster evaluators; provide access to and information about new resources; and maximize interaction with regional, state, or national experts.

DESIGN OF THE CONFERENCE

The design of the conference includes a variety of tasks and activities performed by the cluster evaluation team. Each team member is responsible for several tasks that should be completed within pre-established timelines.

The design process begins with a meeting to specify, based on previous information, the topics and themes to be addressed in the conference. Information about potential topics comes from the previous conference, requests communicated by project staff, and issues the cluster evaluator team consider important for the cluster project staff. Names of guest speakers with known relationship to the conference topics or themes are proposed. Conference centers and/or hotels to hold the conference are proposed and project site visits are confirmed.

There are seven fundamental steps in the designing phase of the networking conference:

- Identification of possible themes and topics of the conference.
- Identification of potential guests speakers.
- Identification of possible location to hold the conference.
- Contacting conference participants.
- Assignment of tasks to team members.
- Development of the preconference booklet.
- Mailing of the preconference booklet to participants.

Additional tasks include:

- Formulation of objectives, topics, themes and title of the conference.
- Contacting possible guest speakers to obtain information about availability and personal background.
- Defining criteria (costs, characteristics of the accommodations, location in the city, accessing roads, facilities, conference rooms, food service, etc.) to guide the selection of the conference center and/or hotel location.
- Contacting conference centers and/or hotels identified to obtain information related to criteria.

- Asking project directors and/or coordinators of site visits for a description of the activities they will conduct during visits. Team members also provide site visit planning criteria to project directors and coordinators.
- Keeping records of participants, dates of attendance, meals, and special needs.
- Designing, developing, or adapting the conference evaluation form.

A second meeting is conducted to fine tune aspects related to the steps described above. The following activities are completed:

- Formulation of final theme and topics of the conference.
- Formulation of conference objectives.
- Selection of potential guests speakers. Based in the topics and objectives, guest speakers are selected. Usually more than one guest speaker is suggested.
- Selection of conference center and/or hotel to hold the conference. The selection is based on the characteristics and criteria (costs, accommodations, locations, etc) previously defined.
- Reporting about site visits activities. Activities proposed by project directors and/or coordinators at their project sites are discussed with other team members. Site visits usually include lunch, conversation with project stakeholders, project presentation, observation of students working in their project, and classroom visits.

After the second meeting, team members are assigned four fundamental tasks:

1. Reconfirm guest speaker availability and ask for biographical sketch and photograph. The team member establishes the final contact with the guest speaker and gives him/her details about location of the conference, topics to address, honorarium, transportation arrangements, etc.

2. Send memos to conference participants informing them of conference date and asking for needs in relation to accommodations, meals, or other things. Participants receive memos with the dates of the conference, location, topics, sites visits, and questions about their needs. They send back information about their preferences in relation to food and accommodations. In addition, they can send information about any special presentation or intervention they may want to have in the conference. Based on this information a record of the participants and their requests is created. This information will be used to reconfirm lodging reservations and participants' meals.

3. Design, development, and/or selection of conference activities and/or materials. Exercises, group activities, and materials to use or read before and at the conference are designed, developed, or selected.

4. Develop and mail the pre-conference booklet. Pre-conference booklet includes the conference agenda, a biosketch of the guest speaker, the maps of the sites visits, conference center and hotel, participants name list, preconference and conference assignments. Materials should be read and pre-assignments completed prior to the conference. The booklet is mailed to participants, guest speaker, and other guests. The completion of this task marks the end of the designing phase of the conference.

IMPLEMENTATION OF THE CONFERENCE

The implementation of the conference is guided by the agenda. Conference agendas will vary depending on the topics and activities planned for each conference. There is no permanent sequence of steps in the implementation. However, there are some common steps to all conferences:

- Assisting participants at hotel or conference center.
- Assisting participants in the social reception, dinner, and guest speaker presentation.
- Participating in conference work sessions.
- Attending sites visits.
- Participating in cluster business session work.

Some specific tasks completed at the implementation stage are:

- Reception of participants. Participants are received in the hotel or conference center. Assistance is provided to help them to find their way to accommodations or to conference sessions. Each participant receives a name tag, and may receive an additional preconference booklet and other materials needed for the sessions.

- Social reception, dinner and guest speaker speech. Participants are offered a social reception and a dinner where participants introduce themselves, talk about their projects, and listen to a guest speaker. This reception gives participants the opportunity to talk about project issues in a relaxed environment, ask project questions related to the speaker's topic, and talk with the speaker on a one to one basis about their projects.

- Group work. Group work is based on assignments received in the pre-conference booklet. They may include small group discussions, or whole group discussion. The main goal of the group discussion is to stimulate the exchange of ideas and experiences among participants, and to build a network among the projects.
- Site visits. Participants visit a project site. This is one of the most enriching experiences for the participants because they have the opportunity to see other projects in operation, talk to project staff, talk to project recipients, tour rooms and labs, and question staff about project matters. It gives them the opportunity to observe project activities in a real situation.
- Special events. This part includes special presentations, work group, or exercises, conducted by one or more members of a project, related to the theme of the conference.
- Cluster business and announcements. This part of the conference is key for the continuous development of the cluster networking conference. In this section participants complete several tasks: (1) talk about specificities of each project, (2) exchange information about next events of interest for the projects, (3) deal with any other issue (budget, evaluation, needs, project staff expectations, etc) related to the projects, (4) select the next conference dates and identify possible locations for the next conference, and (5) complete the conference evaluation form. After this section the conference is adjourned. This event marks the end of the implementation phase.

EVALUATION OF THE CONFERENCE

The last phase of the networking conference is the evaluation. This phase includes four steps:

- Analyzing and reporting results of the conference evaluation.
- Compiling conference information/materials.
- Writing the post conference report
- Mailing the post conference report to the participants.

- Analyzing and reporting results of the conference evaluation. Qualitative and quantitative information collected from participants is analyzed and an evaluation report is written.
- Designing, writing, and mailing of the post-conference report. The post-conference report is a comprehensive report that includes narrative of all events and issues addressed in the

conference. It includes conclusions of the work groups, expectations, key points presented by the guest speaker, the conference evaluation report, materials handled out in the conference, or selected after the conference by team members. The selection of these materials is based on issues addressed in the conference. The post-conference report is not just a conference evaluation report; it fulfills a formative function by providing useful materials to project staff and conference participants.

NETWORKING CONFERENCES SCOPE AND LOCAL PROJECTS

Networking conferences respond to different project needs: (1) need to increase project effectiveness in solving problems and dealing with science education issues, (2) need to build and sustain relationships with other schools and projects, (3) need to learn about new developments and obtaining new knowledge about science education, (4) need to compare and determine the efficiency of implementation procedures related to common outcomes, (5) need to acquire the capacity to self-evaluate practices and activities, and (6) need to share commonalities that allow projects progress toward intended state and national goals and objectives for science education.

Networking conferences are important in increasing the effectiveness of staff in local schools. Projects facing similar problems learn successful practices from other projects. Projects can adapt approaches already proven successful. Networking conferences provide opportunities for participants to learn about ways to increase the effectiveness and efficiency of their programs. In addition, there is transference of experiences from one project to another, providing extra meaning to project staff work.

Networking conferences are also important in building and sustaining relationships and interactions among schools from different locales. Exchange of ideas can be a catalyst for change leading to project improvement. The more complex the change needed, the more interaction is required (Fullan, 1991). Relationships and interactions are built around sharing of materials, curriculum ideas, content knowledge, and science education methodologies. Conference participants learn about new ways to approach science education and instruction. Teachers from one project have become models for teachers from other projects. Project

staff exchange materials, ideas, and innovations in curriculum and classroom instruction. In addition, participants update previous knowledge.

Networking conferences provide opportunities to collect new ideas and information for future implementations. Although projects are each unique, they also have many similarities which provide the common ground for applying ideas from one to another project. The particularities also provide a framework for seeing how certain approaches can be more successful than others. Networking conferences are a place to disseminate and share knowledge based on practice, combining practice-based knowledge with research-based knowledge from the literature, and creating a strong foundation for developing new approaches and/or maintaining the energy of project activities. Additionally, project staff can become "multipliers" of information by sharing their experiences with others.

Another key issue related to networking conferences is the participants internalization of evaluation as a continuous process whose goal is to maintain, and/or to improve current project practices, activities, and initiatives. Networking conferences are conducted by a team of evaluators who share and communicate that evaluation 1) is primarily a formative process; 2) should involve all stakeholders; 3) can be used to maintain, improve, or change implementation strategies; and 4) is an integral part of any educational activity. Consequently, evaluation activities conducted in the conferences are intended to help projects reflect on their own programs and impact. Project staff participating in the conference learn to make effective use of evaluative data to improve their own programs. They understand that strengths and weaknesses are more important as benchmarks to continue, maintain an approach, or to change a practice than characterizing them as success or failure. They understand the purpose of evaluation is for making improvements.

Networking conferences are one forum in the cluster evaluation process intended to build evaluation skills and develop evaluation capacity of projects and project staff. They are also the setting where common cluster outcomes are negotiated, a key element of the cluster evaluation. These outcomes provide a significant part of the framework for the evaluation of the cluster of projects, and "represent to the projects the intended impact of the cluster" (Barley, 1991).

POWER OF NETWORKING CONFERENCES

The power of networking conferences can be summarized in nine fundamental propositions.

Networking conferences:

- Constitute an effective forum to discuss successes and problems faced by each project.
- Help stakeholders to understand evaluation as a continuous process and not just an end of project activity.
- Promote the application of ideas and knowledge gained by project staff in the workshops and activities presented and transference to individual project activities.
- Provide uninterrupted time for staff to reflect on the strengths and limitations of their projects.
- Provide procedures/guidelines for collaboratively developing a set of common cluster outcomes.
- Provide feedback to Foundation staff and cluster evaluators about project development in a face-to-face setting.
- Provide the opportunity for sharing new knowledge about science education and its evaluation
- Facilitate opportunities to interact with state and national-level science education experts.
- Highlight the importance of individual projects as well as the cluster of projects.
- Serve to disseminate information about new trends and issues in science education (Pearl & Rubino, 1993).

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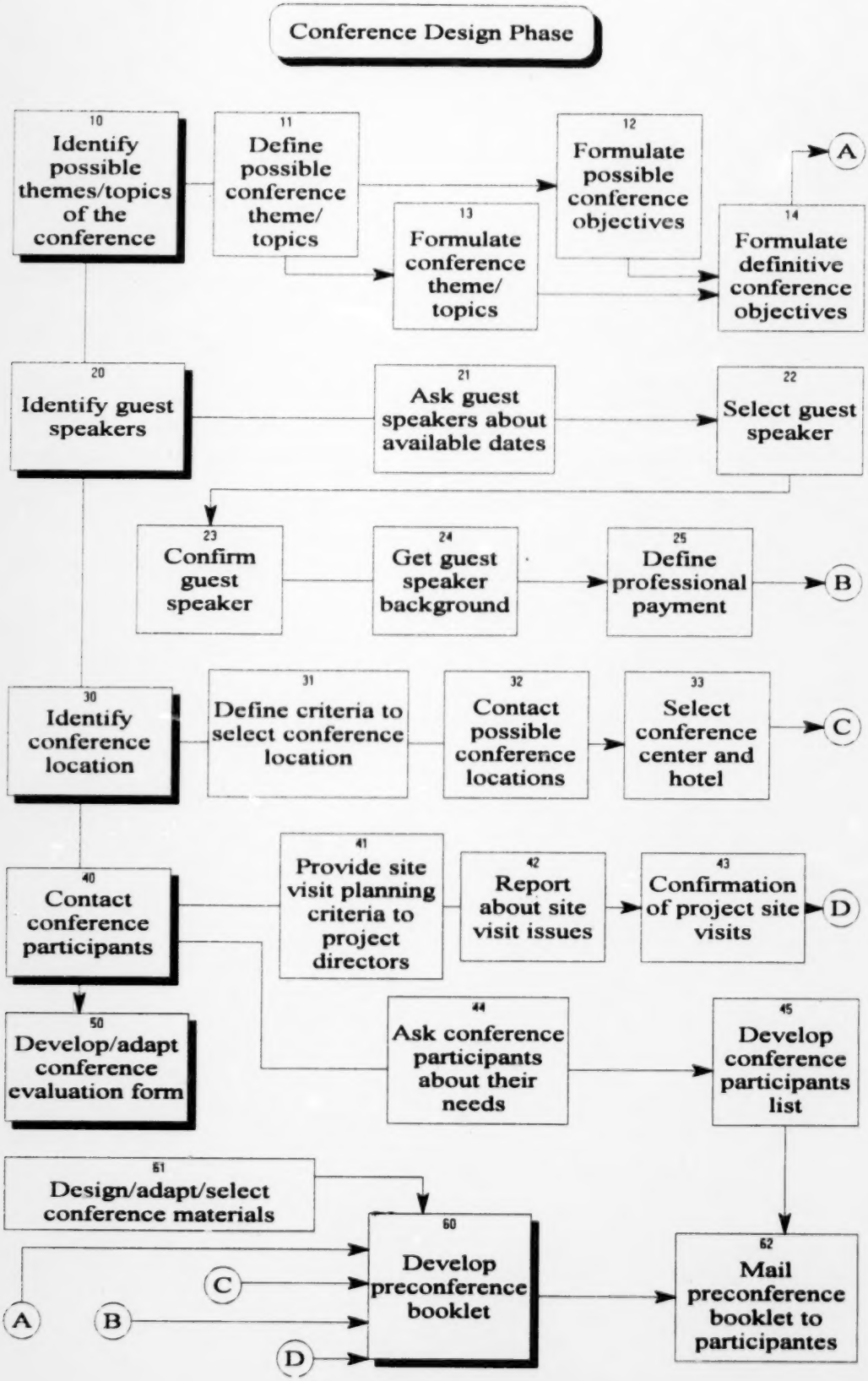
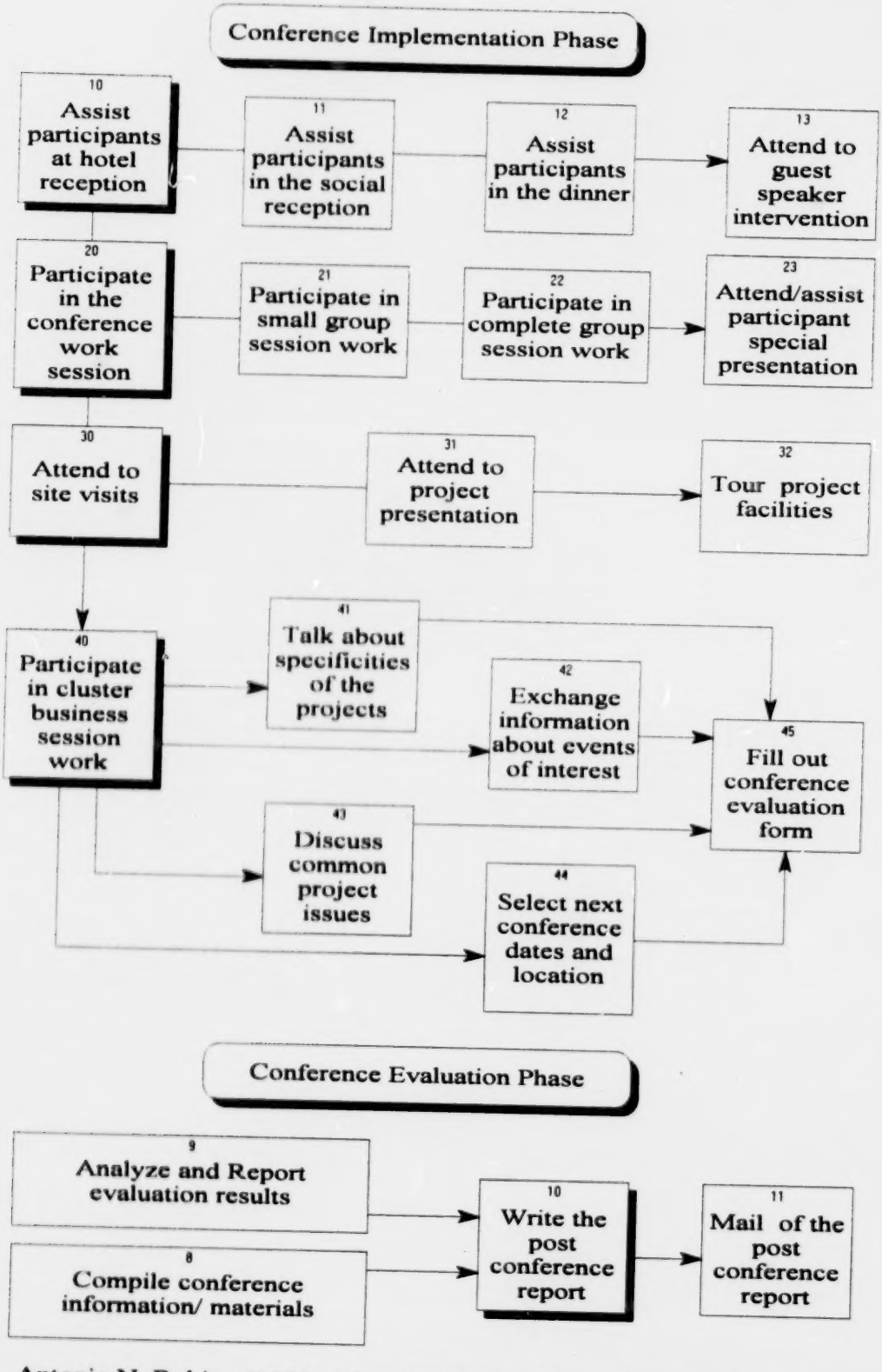
Appendix A
Conference Planning Task Description

The squares with thicker borders represent the planning tasks. Tasks are numbered with two digits decimal numbers. Each tasks may be divided into simpler tasks. Letters in circles represent sub-products that will be input of a new activity or task.


Conference Design Phase
10
Identify possible themes/topics of the conference
11
Define possible conference theme/ topics
12
Formulate possible conference objectives
13
Formulate conference theme/ topics
14
Formulate definitive conference objectives
A
20
Identify guest speakers
21
Ask guest speakers about available dates
22
Select guest speaker
23
Confirm guest speaker
24
Get guest speaker background
25
Define professional payment
B
30
Identify conference location
31
Define criteria to select conference location
32
Contact possible conference locations
33
Select conference center and hotel
C
40
Contact conference participants
41
Provide site visit planning criteria to project directors
42
Report about site visit issues
43
Confirmation of project site visits
D
50
Develop/adapt conference evaluation form
44
Ask conference participants about their needs
45
Develop conference participants list
51
Design/adapt/select conference materials
60
Develop preconference booklet
62
Mail preconference booklet to participantes
A
B
C
D



Antonio N. Rubino (1993). Planning Phases: Networking Conference. SAMPI

Appendix B
Proposed Time Frames to Complete
Conference Planning Tasks

Networking Conference Tasks Time Frames

NETWORKING CONFERENCE PLANNING		
Conference Design Phase		
TASKS	TIME (WEEKS)	TOTAL WEEKS
▸ Identify possible themes/topics of the conference. ▸ Contact conference participants. ▸ Develop/adapt conference evaluation form.	5	9
▸ Identify potential guest speakers. ▸ Identify conference location.	1	
▸ Design/adapt/select conference materials. ▸ Development of the preconference booklet. ▸ Mailing of the preconference booklet to participants.	3	
Conference Implementation Phase		
▸ Assist participants at hotel or conference center. ▸ Social reception, dinner and guest speaker speech. ▸ Participate in conference work sessions. ▸ Attend to sites visits. ▸ Participate in cluster business session work.	1	1
Conference Evaluation Phase		
▸ Analyzing and reporting results of the conference evaluation.	3	9
▸ Compiling conference information/materials.	3	
▸ Writing post conference report.	2	
▸ Mailing the post conference report to the participants.	1	

*** Time frames show minimum estimated to complete all tasks. Conference planning with a looser time frame is recommended**